



Methodology Updates for the Vintage 2021 Estimates

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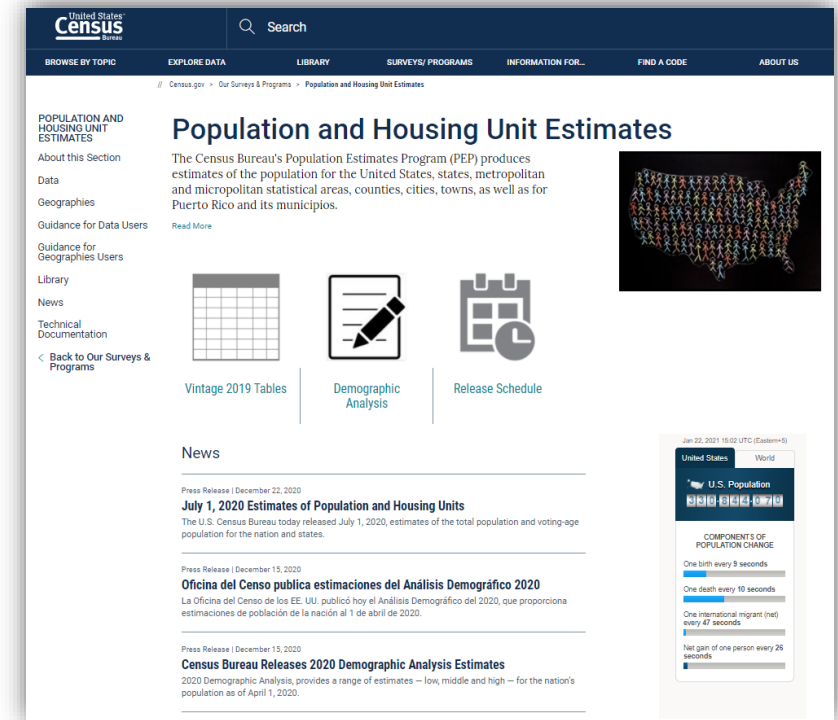
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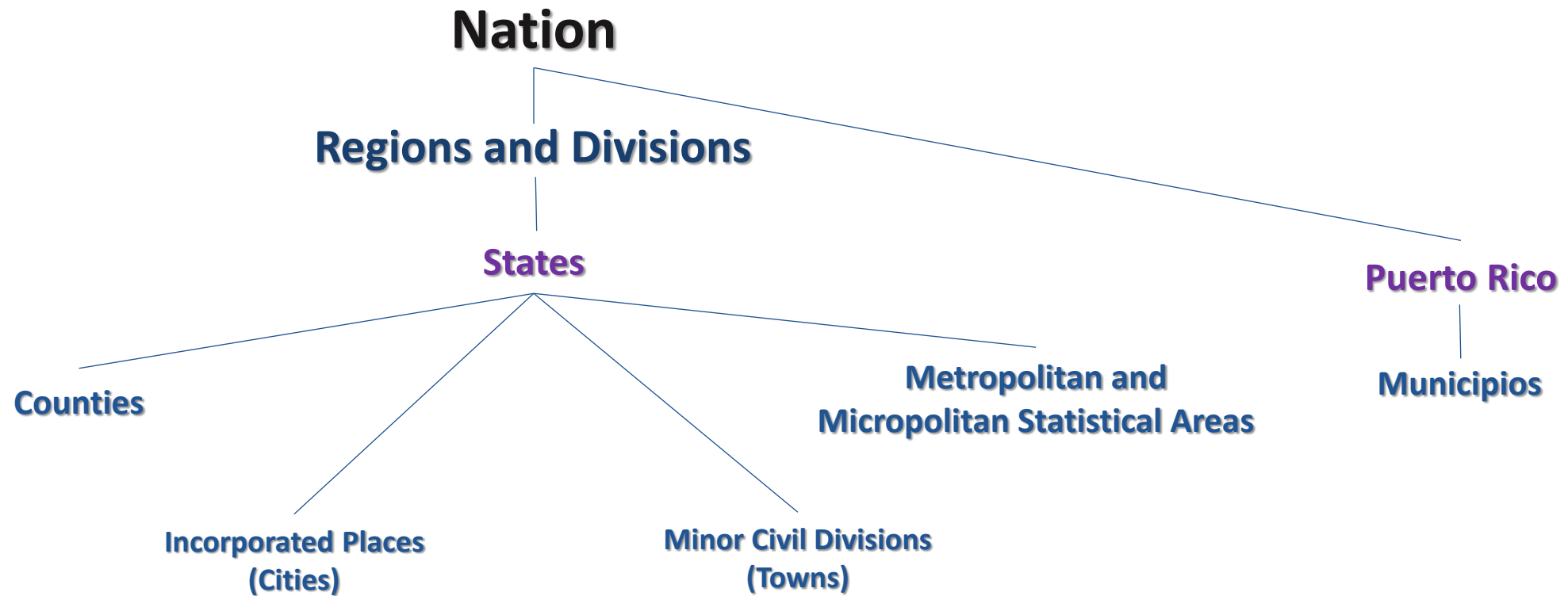
The Population Estimates Program

The Population Estimates Program (PEP) disseminates official measures of population and housing units between decennial censuses.

- **Mandated by federal law, the estimates, along with other Census programs (such as the ACS), inform over \$675 billion of Federal government spending each year**
 - Recently, the estimates were used to distribute over \$200 billion to states and cities for the 2020 CARES Act and 2021 American Rescue Plan
- **Cover basic population and housing topics supporting:**
 - The ACS and other federal surveys (population controls and denominators)
 - Academic and business research
 - Program planning in the public and private sectors
- **Latest estimates for July 1, 2020**
- **Estimates extend back to 1900**



PEP Estimates Geographies



80,000+ Geographic Areas / 40,000+ Communities

Annual Estimates Detail

Estimate Type	U.S.	States	Metro/ Micro Statistical Areas	Counties	Cities and Towns	Puerto Rico	Puerto Rico Municipios
Total Resident Population	X	X	X	X	X	X	X
Components of Change (Births, Deaths, Net Migration)	X	X	X	X		X	
Population Characteristics (Age, Sex, Race, Hispanic Origin*)	X	X		X		X	X
Monthly Population (Five Universes**)	X						
Group Quarters Population	X (by char)	X (totals)		X (totals)			
Housing Units	X	X		X			

*For Puerto Rico Commonwealth and its municipios, population estimates are produced by age and sex only.

**The five estimates universes are: resident, resident plus Armed Forces overseas, civilian, civilian noninstitutionalized, household.

Availability of Vintage 2021 Population and Housing Unit Data Products

Date of Release	Vintage 2021 Population and Housing Unit Estimates Data Products
December 2021	<ul style="list-style-type: none">• National and state population and demographic components of population change• Puerto Rico Commonwealth population and demographic components of population change• National, state, and Puerto Rico Commonwealth population age 18 and over
March 2022	<ul style="list-style-type: none">• County and metropolitan/micropolitan statistical area population and demographic components of population change• Puerto Rico municipio population
April 2022	<ul style="list-style-type: none">• National population by age and sex
May 2022	<ul style="list-style-type: none">• City and town (incorporated place and minor civil division) population• National, state, and county housing units
June 2022	<ul style="list-style-type: none">• National, state, and county population by age, sex, race, and Hispanic origin• Puerto Rico Commonwealth and municipio population by age and sex

census.gov/programs-surveys/popest/about/schedule.html

Methods

- **County-level geographies and above**: cohort-component method measuring population change since the last census using the most current administrative records on births, deaths, and migration
- **Subcounty geographies**: distributive housing unit method to estimate the household population, which is added to an estimate of the population in group quarters
- **Housing units**: component-based method beginning with the most recent decennial census and measuring change in the housing stock using survey and administrative data

Annual Updates to the Estimates

- **Base population updates:** Count Question Resolution changes, legal boundary changes, and other geographic updates
- **Revisions to the components of change:** Incorporation of more recent and/or complete data, changes to the methods of estimating the components of population change and special population stock estimates used in the estimates process
- **Changes to the method of estimating population:** Revisions to the method of estimating population using the components of change and special population stock estimates

Challenges for Developing the 2020 Estimates Base

- **The census typically forms the base for the population estimates**
- **More complicated for Vintage 2021 due to:**
 - Major uncertainty in timeline for receiving internal 2020 Census files
 - Questions about quality of the 2020 Census results
 - Indeterminate amount of time needed to evaluate the 2020 Census data for our purposes *and* finalize a differential privacy mechanism

Blending the 2020 Population Estimates Base

Counties and Higher Levels of Geography

- **“Blended base” method: control April 1, 2020 from Vintage 2020 (based on the 2010 Census) to other sources to generate a plausible base**
 - National 2020 Demographic Analysis estimates distribution by single year of age and sex
 - County total population from the 2020 Census PL 94-171 redistricting data
- **Benefits: consistency with published 2020 Census totals, adaptive framework**
- **Possible limitation: issues present in Vintage 2020 may be carried into Vintage 2021**

Privacy-Protected 2020 Population Estimates Base

Subcounty Geographies

- **Overall method remains unchanged**
- **Data sources**
 - Household population: 2020 Census (Census Edited File (CEF) + noise)
 - Housing units: 2020 Census (invariant)
 - Group quarters population by 7 major types: 2020 Census (CEF + noise)
 - County control: county-level blended base
- **Method and Privacy Loss Budget was approved by the Census Bureau's Data Stewardship Executive Policy Committee**

The Impact of COVID-19

- **Extended beyond data delays/challenges for the April 1, 2020 estimates base**
- **Also affected the components of change**
- **Each component was evaluated to determine if adjustments were needed**
 - Births and deaths: used the most current provisional data from the National Center for Health Statistics
 - International migration: used current administrative data to adjust American Community Survey input data
 - Domestic migration: used research on benchmark data and historical trends to determine that no adjustment to the method was necessary
- **Adjustments will be summarized in the Vintage 2021 method statement**

Next Steps for Vintage 2021

- Complete estimates production for counties and higher levels of geography
- Subcounty population and housing unit estimates production
- Continue stakeholder outreach on finalized methodology
- Dissemination of Vintage 2021 estimates
 - <https://www.census.gov/programs-surveys/popest/about/schedule.html>

Beyond Vintage 2021

- **Timeline for receiving additional 2020 Census data for use in the estimates is presently unknown**
 - Also impacts production timeline for the 2010-2020 Intercensal Estimates
- **2020 Census data will need to be evaluated to determine suitability for use in the estimates base**
 - Will be determined using coverage measures and results from the Estimates Evaluation (E2) project
 - Specific geographies/characteristics that are concerning?
- **Blended base could be extended to Vintage 2022 (and beyond)**

For More Information

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<https://www.census.gov/programs-surveys/popest.html>